



Annual Reports :: Year 6 :: University of Arizona

EPO: University of Arizona

These are the Education and Public Outreach activities for the University of Arizona.

### Great Explorations in Math and Science – Astrobiology

Professional development opportunity for K–12 teachers utilizing curricular materials from Lawrence Hall of Science Great Explorations in Math and Science (LHS GEMS). This is a full–day workshop within a series of workshops spanning the full spectrum of science. Teachers are able to receive college credit upon completion of a set of these workshops, of which this Astrobiology workshop is a part.

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### Milky Way Galaxy Workshop

One hour workshop and curriculum presentation on the size and scale of the Milky Way Galaxy.

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### Living the Polar Lifestyle – The Importance of Water for Life

One hour workshop and curricular materials presentation at the Arizona Science Teachers Association conference. The topic focused on the importance of water for life within the context of Astrobiology.

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### Relevance of Remote Sensing in Astrobiology

A one hour workshop providing content knowledge about remote sensing and its relevance to astrobiology. Curricular materials were also disseminated.

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### Science Communication Working Group

The purpose of the NAI Science Communication Group is to provide a forum for communicators who either work in or have an interest in astrobiology to exchange ideas and information and explore ways of sharing this with those who wish to communicate astrobiology more effectively. Ultimately, the group will strive to understand how elements of one part of the science communication spectrum might lead to innovative approaches in communicating astrobiology to public audiences. Emphasis will also be placed on improving specific arenas of science communication – for example in the scientist/ science journalist relationship. This knowledge will be disseminated through workshops and short courses at astrobiology–related meetings for a

range of audiences (for example, researchers, journalists or specific groups of experts), at standalone workshops (for example for university/research institution public information officers) and via an Internet site to provide information across the astrobiology community.

The group will also develop interdisciplinary approaches for the effective communication of astrobiology and will work closely with the NAI and NAI teams, when invited, to implement them – for example, contributing expert input and offering best practices for an education or communication project. It may also occasionally report on specific issues, suggesting solutions and a plan for implementation.

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#### Astrobiology Public Lecture

Timothy Slater was invited to the University of Nebraska to give a public lecture on the background and current science of astrobiology.

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#### Astrobiology Talk for High School Teachers

Tim Slater was invited to the University of Nebraska in Lincoln, NB to speak to high school teachers about teaching astrobiology.

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#### Communicating Astrobiology to the Public Conference

Timothy Slater attended the "Learning How to Communicate Astrobiology to the Public" conference and brought results back to UofA scientists and EPO members.

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#### International Optics Conference – Invited Talk

Timothy Slater was invited to give a talk to scientists and educators on the teaching and learning of integrated science.

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#### Geological Society of America Meeting Workshop

Dr. Timothy Slater gave a talk on the testing and grading strategies for introductory science courses at this meeting in Seattle WA.

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#### Templeton Foundation Grant Investigating Connection Between Astrobiology and Spirituality

Tim Slater, Chris Impey, and Richard Poss of the University of Arizona were awarded the Templeton Foundation Grant in February to investigate the relationship between astrobiology and spirituality.

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#### National Science Teachers Association Evolving Earth workshop

One-hour workshop focusing on the integration of biology and geology utilizing a piece of curriculum from the Life in the Universe Lab Activities Manual.

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### Astrobiology Summer Course

Five-week summer course offered as a part of a Masters in Biology program at the University of Arizona. The Masters Program is designed for in-service teachers to obtain a Master's degree through the General Biology Program. Sponsored in part by the Howard Hughes Medical Institute. Guest lectures provided by local astronomers and biologists.

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### Sabbatical Astrobiology Collaboration

Professor of Biophysics arriving at the University of Arizona Life and Planets Astrobiology Center from Canada. He will be collaborating with the Conceptual Astronomy and Physics Education Research (CAPER) group to learn sound pedagogical teaching and research methods in the field of astrobiology. He will also be a lead instructor for the on-line astrobiology course co-sponsored by NAI.

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### Next Generation of Science Centers

Dr. Tim Slater was a panelist for a discussion on how astrobiology can be effectively communicated to the public.

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### Voyages Through Time (VTT) Collaboration

NAI EPO leads from University of Arizona attended a Voyages Through Time teacher training workshop to become acquainted with the curriculum. The leads will then be responsible for contributing to VTT dissemination efforts via workshops, short courses, and professional development experiences for teachers.

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### Natives, Africans, Asians, Latinos, & Allies (NALA) Workshop

Half day astrobiology workshop conducted at the Natives, Africans, Asians, Latinos, & Allies (NALA) Conference in South Dakota.

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### Journal of College Science Teaching

Article (now in press) about teaching an undergraduate science majors course in astrobiology about to appear in the Journal of College Science Teaching

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### Mars GRS Curriculum Development Project

Curriculum development project focusing on the NASA "Follow the Water" theme. Curriculum related to Mars developed by a team of scientists, teachers, and curriculum developers at the Lunar and Planetary Sciences Lab in Tucson Arizona. Following development, workshops were provided for area teachers on the curricular materials.

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### On-Line Astrobiology for Teachers

This is an on–line course for middle and high school science teachers. The course topics cover the discovery of planetary systems around other stars, the nature of habitable zones around distant stars, the existence of life in extreme environments including the hydrothermal ecosystems of Yellowstone National Park, and the cryogenic ecosystems of Antarctica. These concepts serve as a foundation to study possible extraterrestrial ecosystems on objects like Mars and Europa. The teachers also investigate the methods used in the ongoing search for extra–terrestrial intelligence (SETI). The overarching theme of the course is to align the teaching of astrobiology concepts with the National Science Education Standards and the NASA Roadmap for Astrobiology Research. Sponsored by NASA Astrobiology Institute. Teachers develop strong pedagogical content knowledge in astrobiology.

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